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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,162	03/31/2008	Jorg Behrens	DE03 0414 US1	3846
65913	7590	06/11/2010	EXAMINER	
NXP, B.V.			IM, JUNGHWA M	
NXP INTELLECTUAL PROPERTY & LICENSING				
M/S41-SJ			ART UNIT	PAPER NUMBER
1109 MCKAY DRIVE			2811	
SAN JOSE, CA 95131				
			NOTIFICATION DATE	DELIVERY MODE
			06/11/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/581,162	Applicant(s) BEHRENS, JORG	
	Examiner JUNGHWA M. IM	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-33 is/are allowed.
- 6) ☒ Claim(s) 20-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsunomiya et al. (US 5719448), hereinafter Utsunomiya in view of Lien (US 5723822).

Regarding claim 20, Fig. 2 of Utsunomiya shows a semiconductor component comprising a semiconductor chip made of a doped silicon substrate, which chip is doped into a semiconductor device and structured, and comprises;

a electrode pad (26) formed directly on the doped silicon substrate (23) within a contact window, wherein the open grid structure forms individual grid openings that leave portions of the doped silicon substrate exposed within the contact window; and
a connection metallization (5) formed directly on the doped silicon substrate.

Fig. 2 of Utsunomiya shows most aspects of the instant invention except a reinforcing system formed in an open grid structure within a contact window, wherein the open grid structure forms that leave portions of the doped silicon substrate exposed within the contact window at the exposed portions of the doped silicon substrate in the contact window, and “the reinforcing system and the connection metallization have different physical properties.” Fig. 6 of Lien shows a reinforcing system (312) formed in an open grid structure (in Fig. 7) within a contact window (315).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teachings of Lien into the device of Utsunomiya in order to have a reinforcing system formed in an open grid structure within a contact window, therefore, resulting in the open grid structure forms that leave portions of the doped silicon substrate exposed within the contact window at the exposed portions of the doped silicon substrate in the contact window and the reinforcing system and the connection metallization have different physical properties for improved bonding.

Regarding claim 21, Fig. 6 of Lien shows the reinforcing system having an open grid structure is formed from an insulation coating (208).

Regarding claim 22, Fig. 7 of Lien shows the grid structure is formed so as to be an open groove structure.

Regarding claim 23, Fig. 7 of Lien shows that the grid structure may be formed so as to be an open tube structure.

Regarding claim 24, the combination of Utsunomiya/Lien shows most aspects of the instant invention except "an area of the grid structure of thermal oxide constitutes >50% of the area of the contact window." However, it would have been obvious to one of ordinary skill in the art at the time of the invention made to have area of the grid structure of thermal oxide constituting >50% of the area of the contact window in order to reduce the brittleness of the grid structure, since it would have been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only in routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 25, the combination of Utsunomiya/Lien shows most aspects of the instant invention except “the open grid structure comprises grid lands and wherein a ratio of height, h , to width, b , of the grid lands is in the range of 1:25 to 1:50.” However, it would have been obvious to one of ordinary skill in the art at the time of the invention made to have the open grid structure comprising grid lands and wherein a ratio of height, h , to width, b , of the grid lands is in the range of 1:25 to 1:50 in order to accommodate specified configuration, since it would have been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only in routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 26, the combination of Utsunomiya/Lien shows most aspects of the instant invention except “the open grid structure comprises grid lands and grid openings and wherein the ratio between the area of the grid lands and the area of the grid openings is greater than 70%.” However, it would have been obvious to one of ordinary skill in the art at the time of the invention made to have the open grid structure comprising grid lands and grid openings and wherein the ratio between the area of the grid lands and the area of the grid openings is greater than 70% in order to accommodate specified configuration, since it would have been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only in routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 27, the combination of Utsunomiya/Lien shows the open grid structure of the reinforcing system comprises oxide lands formed directly on the doped silicon substrate.

Allowable Subject Matter

Claims 28-33 are allowed.

The following is an examiner's statement of reasons for allowance.

The prior art of record does not teach or render obvious, a semiconductor device with combinations of elements as set forth in the claims, either singularly or in combination at least the limitation of "the emitter contact comprising: a reinforcing system formed directly on the emitter in an open grid structure within an emitter contact window, wherein the open grid structure forms individual grid openings that leave portions of the emitter exposed within the emitter contact window; and a connection metallization formed in between the open grid structure of the reinforcing system and directly on the emitter; wherein the reinforcing system and the connection metallization have different physical properties; the base having a base contact formed thereon, the base contact comprising having: a reinforcing system formed directly on the base in an open grid structure within a base contact window, wherein the open grid structure forms individual grid openings that leave portions of the base exposed within the base contact window; and a connection metallization formed in between the open grid structure of the reinforcing system and directly on the base; wherein the reinforcing system and the connection metallization have different physical properties; and a bond wire connected between the emitter contact and a connection pin of the leadframe; and a bond wire connected between the base contact and a connection pin of the leadframe."

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUNGHWA M. IM whose telephone number is (571)272-1655. The examiner can normally be reached on MON.-FRI. 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne A. Gurley can be reached on (571) 272-1670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Junghwa M. Im/
Examiner, Art Unit 2811

/J. M. I./
Examiner, Art Unit 2811